

## Appendix D – The dynamic game elements in the literature

	Dynamic Game Elements										
Author	Progress	Aesthetics	Ease of use	Challenges / Difficulties	Rarity	Competition / Cooperation	Narrative / Themes / Plots / Story	Feedback	Discovery	Social interaction	
#of studies	22	4	2	13	3	24	17	27	2	19	
(Clarke et al., 2017)	x			x	x		x				
(Lee et al., 2017)								x			
(Ahmed, Kevan A. Buckley, Robert Moreton, & Adel Elmaghraby, 2016)			x								
(Sodhi, Girouard, & Thue, 2023)											
(Bucchiarone, Bertoldo, & Favargiotti, 2021)						x		x			
(Gicquel et al., 2019)	x							x			
(Beutelspacher, Mainka, & Siebenlist, 2018)											
(Vicens et al., 2018)				x		x	x	x		x	
(Bousios, Galvalas, & Lambrinos, 2017)						x					
(Gabriel & Schmölzer, 2022)	x			x			x				
(Schell & Kaufman, 2016)											
(Bu, Liu, & Zhang, 2023)											
(Sampaio, Morgado, & Barbosa, 2012)						x					
(Sun, Liu, & Lu, 2023)											
(Fang & Cho, 2020)											
(Kongeseri & Coley, 2019)				x		x	x				
(Bossavit & Parsons, 2016)						x					
(Dargan & Evequoz, 2015)	x					x					
(De Francisco et al., 2024)								x			
(Pflanz, Classe, Araujo, & Vossen, 2017)		x		x			x				
(Becker, Ksenia Koroleva, Diogo Vitorino, & Novak, 2019)	x					x		x		x	
(Iacovidēs, Jennett, Cornish-Trestrail, & Cox, 2013)	x									x	
(Rehm, Foth, & Mitchell, 2018)	x					x		x			
(Jin & Zhao, 2021)	x							x			
(Avolicino et al., 2022)											
(He & Zhang, 2022)											
(Foxman & Forelle, 2014)				x		x				x	
(Peischl, Schanti, & Holzinger, 2014)	x					x		x		x	
(Thiel & Lehner, 2015)										x	
(Minge et al., 2014)				x				x		x	
(N. Prestopnik & Soud, 2013)	x				x		x				
(Mendez et al., 2019)				x				x		x	
(Y. Li & Wang, 2023)											
(Hassan & Hamari, 2020)					x						
(Latifi, Monfared, & Khojasteh, 2022)	x	x						x	x	x	
(Sergeyeva, Bogomiagkova, Orekh, & Kolesnik, 2020)	x						x				
(Fernandes & Junior, 2016)		x									
(Hassan & Nader, 2016)											
(Ortet, Costa, & Veloso, 2021)								x			
(Redondo, Giménez, Navarro, & Fonseca, 2020)			x	x							
(Ronzhyn, Wimmer, Vale Pereira, & Alexopoulos, 2020)											
(Resek et al., 2024)	x			x		x	x	x		x	
(Hassan & Hamari, 2019)						x					
(Bowers et al., 2014)						x					
(N. R. Prestopnik & Crowston, 2011)							x				
(Martis, Bassano, Solari, & Chessa, 2017)											
(Hassan, 2017)											
(Wang, Cho, & Scheller-Wolf, 2021)											
(Quecke & Mariani, 2021)		x					x		x	x	
(Ai, Meng, Li, & Liu, 2023)											
(Eveleigh et al., 2013)	x					x	x	x			
(Haase & Loebel, 2023)								x			
(Thiel, 2015)								x			
(Bhéreur-Lagounaris, 2016)								x		x	
(Gastil & Broghammer, 2021)	x					x	x	x		x	
(Zuo et al., 2023)											
(Vanolo, 2019)	x					x					
(Tennent, Pantidi, & Benford, 2016)						x	x				
(Thiel, Reisinger, Röderer, & Fröhlich, 2016)	x						x	x		x	
(N. R. Prestopnik & Tang, 2015)				x			x				
(Anastasopoulou, Kokolakis, & Andriotis, 2017)											
(Torres-Toukoumidis, Romero-Rodríguez, Aguaded, Pérez-Rodríguez, & Sandoval, 2017)	x			x		x		x			
(Liang et al., 2024)											
(Scherer, Wimmer, & Schepers, 2012)											
(Xu & Zheng, 2024)											
(Liu, Dong, An, & Guo, 2021)						x					
(Padilla-Zea et al., 2022)	x						x	x		x	
(Chian, 2023)				x				x			
(Moreira, Ferreira, Escudero, Pereira, & Durao, 2020)	x										
(Abdollahian et al., 2013)						x					
(Romero-Hernandez, Gonzalez-Riojo, Diaz-Faes-Perez, & Manero-Iglesias, 2018)							x				
(Willis & Parningotan Manik, 2022)						x				x	
(X. Li, Wu, Xie, & Wang, 2023)											
(Wagner & Minge, 2015)						x		x		x	
(Hantke et al., 2018)	x							x			
(Palacin-Silva et al., 2018)										x	
(Gastil, 2023)	x					x		x		x	
(Briones et al., 2018)								x			